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EXAMINER	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/671,827	NISHIOKA ET AL.	
	Examiner	Art Unit	
	Kelly L. Jerabek	2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 February 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-60* is/are pending in the application.

4a) Of the above claim(s) *21-29* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20 and 30-60* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *29 January 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

This is a first office action in response to application 10/671,827 filed on 9/29/2003 in which claims 1-60 are presented for examination.

Priority

Acknowledgment is made of applicant's claim for foreign priority under 35 U.S.C. 119(a)-(d). The certified copies of Japanese patent applications numbers 2002-288263, 2002-288264, 2002-288472, filed on 10/1/2002, have been received and made of record.

Information Disclosure Statement

The information disclosure statements (IDS) submitted on the following dates are in compliance with the provisions of 37 CFR 1.97 and are considered by the Examiner: IDS filed 3/23/2007, IDS filed 2/1/2007, IDS filed 1/23/2004.

Election/Restrictions

Claims 21-29 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected species, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 2/26/2007.

Specification

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-2, 4-9, 14, 30-32, 35 and 57-60 are rejected under 35 U.S.C. 102(b) as being anticipated by Nishioka et al. US 2002/0041445.

Re claims 1-2, 9 and 14, Nishioka discloses an imaging apparatus (digital camera) for taking an image, said imaging apparatus (digital camera) comprising: an optical finder (Keplerian finder) for visually confirming an image to be taken (page 13, paragraphs 352-354); a variable configuration mirror (93) having a reflecting surface (9a) variable in configuration upon a conduction of electricity for performing an optical adjustment of said optical finder (Keplerian finder) based on a change in the

configuration of the reflecting surface (9a) (page 17, paragraph 413-page 18, paragraph 418); and a control section for effecting control so as to conduct electricity (via electrode 70) to said variable configuration mirror (93) when an operation mode of the imaging apparatus (digital camera) is set to a specific mode (page 17, paragraph 413-page 18, paragraph 418; figures 1 and 26). Nishioka states that the variable mirrors (93,94) are used to perform zooming and auto-focusing in order to form an image on a solid-state image pickup device (8) (page 17, paragraph 413). Therefore, it can be seen that electricity is conducted to the variable configuration mirrors (93,94) when an operation mode of the imaging apparatus (digital camera) is set to a specific mode (image-capturing/taking mode).

Re claim 4, Nishioka states that the variable configuration mirror (93) comprises part of an optical system of the optical finder (Keplerian finder) (page 17, paragraph 413-page 18, paragraph 418; figure 26).

Re claims 5-7, Nishioka states that the variable configuration mirror (93) adjusts a variable power ratio, a focal point and a diopter of the optical finder (Keplerian finder) (page 17, paragraphs 413-415).

Re claim 8, Nishioka states that a plurality of units of variable configuration mirrors (93,94,95) are provided to effect the optical adjustment of the optical finder (Keplerian finder) (page 17, paragraphs 413-415; figure 26).

Re claims 30 and 35, Nishioka discloses an imaging apparatus comprising: an image taking section (8) for taking an image; a focus detecting section for effecting focus detection (variable mirrors 93,94 are used to perform auto-focusing); and a taking focus section for adjusting a focal point of the image taking section (8) (page 17, paragraph 413); an optical finder (Keplerian finder) for visually confirming an image to be taken (page 13, paragraphs 352-354); a variable configuration mirror (93) having a reflecting surface (9a) variable in configuration upon a conduction of electricity for performing an optical adjustment of said optical finder (Keplerian finder) based on a change in the configuration of the reflecting surface (9a) (page 17, paragraph 413-page 18, paragraph 418); and a control section for controlling the taking focus section and the variable configuration mirror (93) based on an outcome of said focus detection (page 17, paragraph 413-page 18, paragraph 418; figures 1 and 26). Nishioka states that the variable mirrors (93,94) are used to perform zooming and auto-focusing in order to form an image on a solid-state image pickup device (8) (page 17, paragraph 413).

Re claim 31, Nishioka states that the variable configuration mirror (93) adjusts a variable power ratio, a focal point and a diopter of the optical finder (Keplerian finder) (page 17, paragraphs 413-415).

Re claim 32, Nishioka states that the taking focus section has a variable configuration mirror (93) having a reflecting surface (9a) variable in configuration upon

conduction of electricity so as to adjust the focal point by change in the configuration of the reflecting surface (9a) of the variable configuration mirror (9a) (page 17, paragraph 413-page 18, paragraph 418).

Re claim 57, Nishioka discloses an optical apparatus (digital camera) comprising: a lens variable power adjusting section for adjusting a magnification on an image to be formed by moving a lens (3) (page 13, paragraph 357; figure 1); and a mirror variable power adjusting section for adjusting a magnification by a configuration of a reflecting surface of a variable configuration mirror (9) having the reflecting surface variable in the configuration upon a conduction of electricity (page 13, paragraph 352-356; figure 1).

Re claims 58-60, Nishioka discloses an optical finder for a digital camera (page 13, paragraph 352). Therefore, it can be seen that the optical apparatus comprises an imaging apparatus for taking an image of an object, an observing apparatus for observing a subject and an image forming apparatus for forming an object image.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 10-13, 15-20, 36-49 and 53-56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nishioka et al. US 2002/0041445.

Re claims 10-13 and 53, Nishioka discloses an imaging apparatus (digital camera) comprising: an image taking section (8) for taking an image; a variable configuration mirror (94) to be used for the image taking section (8) having a reflecting surface (9a) variable in configuration upon a conduction of electricity for performing an optical adjustment of said image taking section by change in the configuration of the reflecting surface (page 17, paragraph 413-page 18, paragraph 418; figure 26); an optical finder (Keplerian finder) for visually confirming an image to be taken (page 13, paragraphs 352-354); a variable configuration mirror (93) having a reflecting surface (9a) variable in configuration upon a conduction of electricity for performing an optical adjustment of said optical finder (Keplerian finder) based on a change in the configuration of the reflecting surface (9a) (page 17, paragraph 413-page 18, paragraph 418); and a control section for effecting control so as to conduct electricity (via electrode 70) to said variable configuration mirror (93) when an operation mode of the imaging apparatus (digital camera) is set to a specific mode (page 17, paragraph 413-page 18, paragraph 418; figures 1 and 26). Nishioka states that the variable mirrors (93,94) are used to perform zooming and auto-focusing in order to form an image on a solid-state image pickup device (8) (page 17, paragraph 413). Therefore, it can be seen that electricity is conducted to the variable configuration mirrors (93,94) when an operation

mode of the imaging apparatus (digital camera) is set to a specific mode (image-capturing/taking mode). However, although the embodiment of figure 26 discloses all of the above limitations it fails to go into detail regarding the conduction of electricity to the variable configuration mirrors. Specifically, it fails to state that the control section effects control so as to avoid an overlap of the conduction of electricity for at least one variable configuration mirror of said variable conduction mirrors with the conduction of electricity for the other variable configuration mirror.

Nishioka further discloses in a separate embodiment a zoom type Galilean finder using electrostatically driven variable mirrors (9J, 9K) (figure 28). Nishioka states that when the action of the variable mirror (9J) as a concave reflecting surface is weak and the action of the variable mirror (9K) as a concave reflecting surface is strong, the finder works as a wide-angle Galilean finder, and when the action of the variable mirror (9J) as a concave reflecting surface is strong and the action of the variable mirror (9K) as a concave reflecting surface is weak, the finder works as a telephoto Galilean finder (page 18, paragraph 421). Thus, since when the action of one variable mirror as a concave reflecting surface is strong the action of the other variable mirror as a concave reflecting surface is weak it can be seen that control of the variable mirrors (9J, 9K) is affected so as to avoid an overlap of the conduction of electricity. Therefore, it would have been obvious for one skilled in the art to have been motivated to include a variable configuration mirror control logic for avoiding an overlap of the conduction of electricity of two variable configuration mirrors as disclosed by the embodiment of figure 28 of Nishioka in the single-lens reflex optical system for a digital camera disclosed by the

embodiment of figure 26 of Nishioka. Doing so would provide a means for effectively performing zooming and diopter adjustment of a finder optical path between a wide-angle view and a telephoto view.

Re claim 15, Nishioka discloses an optical finder (Keplerian finder) for visually confirming an image to be taken (page 13, paragraphs 352-354) comprising: a plurality of variable configuration mirrors (93,94,95) having a reflecting surface (9a) variable in configuration upon a conduction of electricity for performing an optical adjustment of said optical finder (Keplerian finder) based on a change in the configuration of the reflecting surface (9a) (page 17, paragraph 413-page 18, paragraph 418); and a control section for effecting control so as to conduct electricity (via electrode 70) to said variable configuration mirror (93) when an operation mode of the imaging apparatus (digital camera) is set to a specific mode (page 17, paragraph 413-page 18, paragraph 418; figures 1 and 26). Nishioka states that the variable mirrors (93,94) are used to perform zooming and auto-focusing in order to form an image on a solid-state image pickup device (8) (page 17, paragraph 413). Therefore, it can be seen that electricity is conducted to the variable configuration mirrors (93,94) when an operation mode of the imaging apparatus (digital camera) is set to a specific mode (image-capturing/taking mode). However, although the embodiment of figure 26 discloses all of the above limitations it fails to go into detail regarding the conduction of electricity to the variable configuration mirrors. Specifically, it fails to state that the control section effects control so as to avoid an overlap of the conduction of electricity for at least one variable

configuration mirror of said variable conduction mirrors with the conduction of electricity for the other variable configuration mirror.

Nishioka further discloses in a separate embodiment a zoom type Galilean finder using electrostatically driven variable mirrors (9J, 9K) (figure 28). Nishioka states that when the action of the variable mirror (9J) as a concave reflecting surface is weak and the action of the variable mirror (9K) as a concave reflecting surface is strong, the finder works as a wide-angle Galilean finder, and when the action of the variable mirror (9J) as a concave reflecting surface is strong and the action of the variable mirror (9K) as a concave reflecting surface is weak, the finder works as a telephoto Galilean finder (page 18, paragraph 421). Thus, since when the action of one variable mirror as a concave reflecting surface is strong the action of the other variable mirror as a concave reflecting surface is weak it can be seen that control of the variable mirrors (9J, 9K) is affected so as to avoid an overlap of the conduction of electricity. Therefore, it would have been obvious for one skilled in the art to have been motivated to include a variable configuration mirror control logic for avoiding an overlap of the conduction of electricity of two variable configuration mirrors as disclosed by the embodiment of figure 28 of Nishioka in the single-lens reflex optical system for a digital camera disclosed by the embodiment of figure 26 of Nishioka. Doing so would provide a means for effectively performing zooming and diopter adjustment of a finder optical path between a wide-angle view and a telephoto view.

Re claim 16, Nishioka discloses an optical finder (Keplerian finder) for visually confirming an image to be taken (page 13, paragraphs 352-354) comprising: a variable configuration mirror (93) having a reflecting surface (9a) variable in configuration upon a conduction of electricity for performing an optical adjustment of said optical finder (Keplerian finder) based on a change in the configuration of the reflecting surface (9a) (page 17, paragraph 413-page 18, paragraph 418); and a control section for effecting control so as to conduct electricity (via electrode 70) to said variable configuration mirror (93) when an operation mode of the imaging apparatus (digital camera) is set to a specific mode (page 17, paragraph 413-page 18, paragraph 418; figures 1 and 26). Nishioka states that the variable mirrors (93,94) are used to perform zooming and auto-focusing in order to form an image on a solid-state image pickup device (8) (page 17, paragraph 413). Therefore, it can be seen that electricity is conducted to the variable configuration mirrors (93,94) when an operation mode of the imaging apparatus (digital camera) is set to a specific mode (image-capturing/taking mode). However, although the embodiment of figure 26 discloses all of the above limitations it fails to go into detail regarding the conduction of electricity to the variable configuration mirrors. Specifically, it fails to state that the control section controls the conduction of electricity so as to retain the configuration of the reflecting surface to be changed in configuration upon the conduction of electricity of the variable configuration mirror to a predetermined configuration within a permissible range.

Nishioka discloses in figure 30 a specific embodiment of an image pickup apparatus using mirrors (9J, 9K) having variable optical properties (page 18, paragraph

423). Nishioka states that the mirrors (9J, 9K) include a range for the maximum quantities of transformation upon the conduction of electricity (page 18, paragraphs 423-431; figure 30). Therefore, it would have been obvious for one skilled in the art to have been motivated to include mirrors (9J, 9K) that have a range for the maximum quantities of transformation upon the conduction of electricity as disclosed by the embodiment of figure 30 of Nishioka in the single-lens reflex optical system for a digital camera disclosed by the embodiment of figure 26 of Nishioka. Doing so would provide a means for effectively performing zooming and focusing using identical variable mirrors (page 18, paragraphs 424-430).

Re claim 17, Nishioka states in the embodiment of figure 30 that a control section (14) effects control so as to conduct electricity to variable configuration mirrors (9J, 9K) at predetermined intervals to retain the configuration of the reflecting surface to a predetermined configuration within a permissible range (page 18, paragraphs 423-431).

Re claim 18, the combination of the embodiments of figures 26 and 30 of the Nishioka reference disclose all of the limitations of claim 16 above. However, neither embodiment states that the control section effects control so as to avoid an overlap of the conduction of electricity for at least one variable configuration mirror of said variable conduction mirrors with the conduction of electricity for the other variable configuration mirror.

Nishioka further discloses in a separate embodiment a zoom type Galilean finder using electrostatically driven variable mirrors (9J, 9K) (figure 28). Nishioka states that when the action of the variable mirror (9J) as a concave reflecting surface is weak and the action of the variable mirror (9K) as a concave reflecting surface is strong, the finder works as a wide-angle Galilean finder, and when the action of the variable mirror (9J) as a concave reflecting surface is strong and the action of the variable mirror (9K) as a concave reflecting surface is weak, the finder works as a telephoto Galilean finder (page 18, paragraph 421). Thus, since when the action of one variable mirror as a concave reflecting surface is strong the action of the other variable mirror as a concave reflecting surface is weak it can be seen that control of the variable mirrors (9J, 9K) is affected so as to avoid an overlap of the conduction of electricity. Therefore, it would have been obvious for one skilled in the art to have been motivated to include a variable configuration mirror control logic for avoiding an overlap of the conduction of electricity of two variable configuration mirrors as disclosed by the embodiment of figure 28 of Nishioka in the single-lens reflex optical system for a digital camera disclosed by the combination of the embodiments of figures 26 and 30 of Nishioka. Doing so would provide a means for effectively performing zooming and diopter adjustment of a finder optical path between a wide-angle view and a telephoto view.

Re claims 19-20, Nishioka discloses an imaging apparatus (digital camera) comprising: an image taking section (8) for taking an image; a variable configuration mirror (94) to be used for the image taking section (8) having a reflecting surface (9a)

variable in configuration upon a conduction of electricity for performing an optical adjustment of said image taking section by change in the configuration of the reflecting surface (page 17, paragraph 413-page 18, paragraph 418; figure 26); an optical finder (Keplerian finder) for visually confirming an image to be taken (page 13, paragraphs 352-354); a variable configuration mirror (93) having a reflecting surface (9a) variable in configuration upon a conduction of electricity for performing an optical adjustment of said optical finder (Keplerian finder) based on a change in the configuration of the reflecting surface (9a) (page 17, paragraph 413-page 18, paragraph 418); and a control section for effecting control so as to conduct electricity (via electrode 70) to said variable configuration mirror (93) when an operation mode of the imaging apparatus (digital camera) is set to a specific mode (page 17, paragraph 413-page 18, paragraph 418; figures 1 and 26). Nishioka states that the variable mirrors (93,94) are used to perform zooming and auto-focusing in order to form an image on a solid-state image pickup device (8) (page 17, paragraph 413). Therefore, it can be seen that electricity is conducted to the variable configuration mirrors (93,94) when an operation mode of the imaging apparatus (digital camera) is set to a specific mode (image-capturing/taking mode). However, although the embodiment of figure 26 discloses all of the above limitations it fails to go into detail regarding the conduction of electricity to the variable configuration mirrors. Specifically, it fails to state that the control section effects control so than an intermittent conduction of electricity for retaining the configuration of the reflecting surface of the variable configuration mirrors to a predetermined configuration within a permissible range is repeated in such a manner that an intermittent cycle for the

variable configuration mirror to be used for the image taking section is shorter as compared to that for the variable configuration mirror to be used for the optical finder.

Nishioka discloses in figure 30 a specific embodiment of an image pickup apparatus using mirrors (9J, 9K) having variable optical properties (page 18, paragraph 423). Nishioka states that the mirrors (9J, 9K) include a range for the maximum quantities of transformation upon the conduction of electricity (page 18, paragraphs 423-431; figure 30). It is inherent that the conduction of electricity for each of the mirrors will be within the defined range and that the intermittent cycle for conduction of electricity of each of the mirrors will vary according to each different distance measurement of the camera. Thus, the intermittent cycle of each of the mirrors will be shorter as compared to the other mirror according to certain distance measurements. Therefore, it would have been obvious for one skilled in the art to have been motivated to include mirrors (9J, 9K) that have a range for the maximum quantities of transformation upon the conduction of electricity as disclosed by the embodiment of figure 30 of Nishioka in the single-lens reflex optical system for a digital camera disclosed by the embodiment of figure 26 of Nishioka. Doing so would provide a means for effectively performing zooming and focusing using identical variable mirrors (page 18, paragraphs 424-430).

Re claims 36 and 47-49, Nishioka discloses an imaging apparatus (digital camera) comprising: an optical finder (Keplerian finder) for visually confirming an image to be taken (page 13, paragraphs 352-354); a variable configuration mirror (93) having a

reflecting surface (9a) variable in configuration upon a conduction of electricity for performing an optical adjustment of said optical finder (Keplerian finder) based on a change in the configuration of the reflecting surface (9a) (page 17, paragraph 413-page 18, paragraph 418); and a control section for effecting control so as to conduct electricity (via electrode 70) to said variable configuration mirror (93) when an operation mode of the imaging apparatus (digital camera) is set to a specific mode (page 17, paragraph 413-page 18, paragraph 418; figures 1 and 26). Nishioka states that the variable mirrors (93,94) are used to perform zooming and auto-focusing in order to form an image on a solid-state image pickup device (8) (page 17, paragraph 413). Therefore, it can be seen that electricity is conducted to the variable configuration mirrors (93,94) when an operation mode of the imaging apparatus (digital camera) is set to a specific mode (image-capturing/taking mode). However, although the embodiment of figure 26 disclosed by Nishioka discloses all of the above limitations it fails to include a storage section for storing an information relating to the configuration of the variable configuration mirror corresponding to a diopter adjustment and also fails to state that the control section controls the variable configuration mirror in accordance with the stored information.

Nishioka discloses in figure 30 a specific embodiment of an image pickup apparatus using mirrors (9J, 9K) having variable optical properties (page 18, paragraph 423). The embodiment of figure 30 further discloses a storage section (14M) for storing information relating to the configuration of the variable configuration mirrors (9J, 9K) and a control section (14) for controlling the mirrors in accordance with the stored

information (shape control) (page 18, paragraphs 423-431; figure 30). Therefore, it would have been obvious for one skilled in the art to have been motivated to include a storage section (14M) capable of storing information relating to the configuration of variable configuration mirrors as disclosed by the embodiment of figure 30 of Nishioka in the single-lens reflex optical system for a digital camera disclosed by the embodiment of figure 26 of Nishioka. Doing so would provide a means for effectively performing zooming and focusing of variable configuration mirrors.

Re claim 37, the embodiment of figure 30 of Nishioka further states that the storage section (14M) stores information relating to a plurality of configurations as the information relating to the configuration of variable configuration mirrors (9J, 9K) (page 18, paragraphs 429-431).

Re claim 38, the embodiment of figure 30 of Nishioka further states that the control section (14) controls the variable configuration mirror to a predetermined configuration based on the stored information when the imaging apparatus is in a mode capable of taking an image (page 18, paragraphs 423-431) (the camera must be turned on for the operating unit (14) to work).

Re claim 39, the embodiment of figure 30 of Nishioka further states that the control section (14) controls the variable configuration mirror to a predetermined configuration based on the stored information in accordance with a turning on of a

power supply of the imaging apparatus (page 18, paragraphs 423-431) (the variable mirrors 9J, 9K are used to form an image on a solid-state image pickup device 8 therefore the camera must be in image capturing mode when the variable mirrors are activated).

Re claim 40, the embodiment of figure 26 of Nishioka states that a diopter condition of the finder (Keplerian finder) is brought to a standard diopter condition by the reflecting surface (9a) configuration of the variable configuration mirror (93) in a condition where electricity is not conducted (page 17, paragraph 413-page 18, paragraph 418). It is inherent that the optical system will have a diopter value even when the variable configuration mirror (93) is not conducting electricity.

Re claim 41, Nishioka states that the finder comprises an optical finder (Keplerian finder) (figure 26; page 17, paragraph 414).

Re claim 42, Nishioka states that the variable configuration mirror (93), at the same time of diopter adjustment, adjusts a focal point of the finder in accordance with a focal point adjustment of an image taking optical system provided at the image taking section (8) (page 17, paragraph 413-page 18, paragraph 418). The variable mirrors (93,94) perform a zoom function, a dipoter adjustment and an auto-focus function.

Re claims 43-44, Nishioka states that the finder (Keplerian finder) has a plurality of variable configuration mirrors (93,94,95) so that a variable power adjustment of the finder can be effected in accordance with a variable power adjustment of an image-taking optical system provided at the image taking section (8) (figure 26; page 17, paragraph 413-page 18, paragraph 418).

Re claims 45-46, Nishioka states that the mirror configurations of the plurality of variable configuration mirrors (93,94,95) are respectively adjusted toward opposite directions from each other into a concave or a convex (figure 26; page 17, paragraph 415).

Re claims 54-56, Nishioka discloses a single-lens reflex optical system for a digital camera (page 17, paragraph 413; figure 26). Therefore, it can be seen that the optical apparatus comprises an imaging apparatus for taking an image of an object, an observing apparatus for observing a subject and an image forming apparatus for forming an object image.

Claims 3, 33-34 and 50-52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nishioka et al. US 2002/0041445 in view of Takeshi JP 2002-221751.

Re claim 3, the Nishioka reference discloses all of the limitations of claim 1 above. Additionally, Nishioka states that a power source (12B) used for variable mirrors may also be used for a display device (45B) (page 18, paragraph 420). However, Nishioka fails to specifically state that the control section effects control so as not to conduct electricity to a variable configuration mirror when the operation mode of the imaging apparatus is set to a through image displaying mode for displaying a through image onto an image display section.

Takeshi discloses a camera using a variable shape mirror. Takeshi further discloses a control means for controlling the camera by not applying power to the variable shape mirror when the camera is in a display mode (page 5, paragraph 24). Therefore, it would have been obvious for one skilled in the art to have been motivated to include control logic so as to not conduct electricity to a variable configuration mirror when a camera is in a display mode as disclosed by Takeshi into the digital camera including variable configuration mirrors disclosed by Nishioka. Doing so would provide a means for avoiding unnecessary power consumption by not driving variable configuration mirrors when a camera is in a display mode.

Re claim 33, the Nishioka reference discloses all of the limitations of claim 32 above. Additionally, Nishioka states that a power source (12B) used for variable mirrors may also be used for a display device (45B) (page 18, paragraph 420). However, Nishioka fails to specifically state that the control section effects control so as not to conduct electricity to a variable configuration mirror when the operation mode of the

imaging apparatus is set to a through image displaying mode for displaying a through image onto an image display section.

Takeshi discloses a camera using a variable shape mirror. Takeshi further discloses a control means for controlling the camera by not applying power to the variable shape mirror when the camera is in a display mode (page 5, paragraph 24). Therefore, it would have been obvious for one skilled in the art to have been motivated to include control logic so as to not conduct electricity to a variable configuration mirror when a camera is in a display mode as disclosed by Takeshi into the digital camera including variable configuration mirrors disclosed by Nishioka. Doing so would provide a means for avoiding unnecessary power consumption by not driving variable configuration mirrors when a camera is in a display mode.

Re claim 34, the combination of the Nishioka and Takeshi references discloses all of the limitations of claim 33 above. Additionally, Nishioka discloses a control section for effecting control so as to conduct electricity (via electrode 70) to said variable configuration mirror (93) when an operation mode of the imaging apparatus (digital camera) is set to a specific mode (page 17, paragraph 413-page 18, paragraph 418; figures 1 and 26). Nishioka states that the variable mirrors (93,94) are used to perform zooming and auto-focusing in order to form an image on a solid-state image pickup device (8) (page 17, paragraph 413). Therefore, it can be seen that electricity is conducted to the variable configuration mirrors (93,94) when an operation mode of the imaging apparatus (digital camera) is set to a specific mode (image-capturing/taking

mode). However, neither reference states that a focus detecting section detects focus by a contrast detection method. The Examiner takes **Official Notice** that performing focus detection in digital cameras using a contrast detection method is well known in the art of digital imaging. Therefore, it would have been obvious for one skilled in the art to have been motivated to include a contrast detection method for detecting focus in the digital camera disclosed by the combination of the Nishioka and Takeshi references. Doing so would provide a means for effectively adjusting the focus of a camera in order to capture an image.

Re claim 50, Nishioka discloses an imaging apparatus (digital camera) comprising: an image taking section (8) for taking an image (page 17, paragraph 413) an optical finder (Keplerian finder) for visually confirming an image to be taken (page 13, paragraphs 352-354); a variable configuration mirror (93) having a reflecting surface (9a) variable in configuration upon a conduction of electricity capable of a diopter adjustment of said optical finder (Keplerian finder) based on a change in the configuration of the reflecting surface (9a) (page 17, paragraph 413-page 18, paragraph 418); and a control section for effecting control so as to conduct electricity (via electrode 70) to said variable configuration mirror (93) when an operation mode of the imaging apparatus (digital camera) is set to a specific mode (page 17, paragraph 413-page 18, paragraph 418; figures 1 and 26). Nishioka states that the variable mirrors (93,94) are used to perform zooming, diopter adjustment and auto-focusing in order to form an image on a solid-state image pickup device (8) (page 17, paragraph 413). Therefore, it

can be seen that electricity is conducted to the variable configuration mirrors (93,94) in order to perform zooming, diopter adjustment and auto-focusing when an operation mode of the imaging apparatus (digital camera) is set to a specific mode (image-capturing/taking mode). Nishioka fails to specifically state that when the finder is not being used the control section controls the variable configuration mirror in order to attain a diopter that is different from the diopter at the time of using the finder.

Takeshi discloses a camera using a variable shape mirror in order to perform diopter adjustment and auto-focusing. Takeshi further discloses a control means for controlling the camera by not applying power to the variable shape mirror when the camera is in a display mode (page 5, paragraph 24). The camera disclosed by Takeshi also includes an optical finder (901) (page 7, paragraph 34). Thus, it can be seen that when use of an optical finder of the camera is to be avoided (when camera is in display mode) the control means does not apply power to the variable shape mirror and the diopter has a different value than when the control means does apply power to the variable shape mirror. Therefore, it would have been obvious for one skilled in the art to have been motivated to include control logic so as to not conduct electricity to a variable configuration mirror when a camera is in a display mode and thus attain an unsuitable diopter as disclosed by Takeshi into the digital camera including variable configuration mirrors disclosed by Nishioka. Doing so would provide a means for avoiding unnecessary power consumption by not driving variable configuration mirrors when a camera is in a display mode.

Re claims 51 and 52, Nishioka states that variable configuration mirrors (9) are transformed by varying the resistance value of variable resistors according to a distance sensor (17) in order to perform zooming, diopter adjustment and auto-focusing (page 13, paragraph 357; page 17, paragraph 413; figures 1 and 26). Therefore, it can be seen that Nishioka's control section may adjust the diopter according to an object distance that is short and it may also adjust the diopter at the time of image taking using an electronic zoom section.

Contacts

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kelly L. Jerabek whose telephone number is **(571) 272-7312**. The examiner can normally be reached on Monday - Friday (8:00 AM - 5:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, ~~[illegible]~~ Lin Ye can be reached on **(571) 272-7372**. The fax phone number for submitting all Official communications is **(571) 273-7300**. The fax phone number for submitting informal communications such as drafts, proposed amendments, etc., may be faxed directly to the Examiner at **(571) 273-7312**.

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